IN THE SPECIFICATION

Please replace the paragraph beginning on Page 2, line 32, with the following amended paragraph:

According to exemplary embodiment of the present invention, ~~as set forth in claim 1,~~ the above object may be solved by a data processing device for performing a reconstruction of computed tomography data, wherein the computed tomography data is reconstructed from acquired CT (computed tomography) data, comprising at least a partial spectrum acquired by using a detector comprising energy resolving detector elements. Furthermore, a memory is provided for storing at least one of the acquired CT data and the computed tomography data. Also, a processor is provided, which is adapted to determine a wave-vector transfer by using the at least partial spectrum and to determine a reconstruction volume. A dimension of the reconstruction volume is determined by the wave-vector transfer. The wave-vector transfer represents curved lines in the reconstruction volume. Then, according to an aspect of the present invention, a rearranging of the CT data is performed, such that it corresponds to an acquisition along a desired source trajectory in the reconstruction volume.

Please replace the paragraph beginning on Page 3, line 30, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 2,~~ the acquired CT data is acquired with a first source movement and the data is rearranged in the reconstruction volume such that it corresponds to data acquired with a second, different source movement. E.g. the first source movement may be a circle and the second source movement may be a helix. Due to this reordering or reorganization of the acquired CT data, the exact helical reconstruction algorithms, which are known in the art as described e.g. in Katsevich "Analysis of an exact inversion algorithm for spiral cone-beam CT", Phys. Med. Biol., vol. 47, p 2583-2597, 2002, which is hereby incorporated by reference, may be used for quasi-exactly reconstructing the data.

Please replace the paragraph beginning on Page 4, line 8, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 3,~~ a filtered back-projection is performed along the curved lines, which may be hyperbolas in the reconstruction volume.

Please replace the paragraph beginning on Page 4, line 19, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 5,~~ the rearranging of the acquired CT data is performed by using John's equation. According to another exemplary embodiment of the present invention as set forth in claim 6, a very simple linear equation is provided, which fulfills the data acquisition of a helical trajectory in the reconstruction volume, allowing for a fast and accurate and quasi-exact reconstruction of the computed tomography data.

Please replace the paragraph beginning on Page 4, line 25, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 7,~~ a computed tomography apparatus is provided, with a scatter radiation detector arranged at a detector unit opposite to an x-ray source, with an offset with respect to a slice plane of a fan-shaped x-ray beam generated by the x-ray source in a direction parallel to a rotational axis of the x-ray source and the scatter radiation detector. The scatter

radiation detector comprises a plurality of energy resolving detector elements. According to an aspect of this exemplary embodiment of the present invention, a rearranging of the acquired CT data acquired by using the scatter radiation detector is performed such that it corresponds to an acquisition, where the x-ray source is displaced along a desired source trajectory in the reconstruction volume. In other words, the acquired CT data is rearranged as if it had been acquired by means of a desired movement of the scatter radiation detector and the x-ray source which may be different to the actual movement of the x-ray source during the data acquisition.

Please replace the paragraph beginning on Page 5, line 10, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 8,~~ the scatter radiation detector is a two-dimensional detector, i.e. a 2D energy resolving detector, which may allow ~~to achieve~~achieving the full energy spectrum of, for example, a polychromatic x-ray source. This may yield a relatively wide spectrum of the wave-vector transfers of the scattered x-ray photons. An interpretation of the projection data

as line integrals in the reconstruction volume and the resorting of the data as if it had been taken along the helical source trajectory may allow for applying exact helical reconstruction algorithms. Furthermore, redundant data may be used to obtain a better image quality.

Please delete the paragraph beginning on Page 5, line 19.

Please replace the paragraph beginning on Page 5, line 21, with the following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 12,~~ a method of performing a reconstruction of computed tomography data is provided, comprising a rearranging of acquired CT data, acquired by means of an energy resolving detector, which may be a two-dimensional energy resolving detector, as if it had been taken by an acquisition along a helical source trajectory.

Please delete the paragraph beginning on Page 5, line 29.

Please replace the paragraph beginning on Page 5, line 31, with the

following amended paragraph:

According to another exemplary embodiment of the present invention, ~~as set forth in claim 15,~~ a computer program for a data processor for performing a reconstruction of computed tomography data is provided. The computer program according to the present invention is preferably loaded into a working memory of the data processor. The data processor is thus equipped to carry out the method of the invention. The computer program may be stored on a computer readable medium, such as a CD-ROM. The computer program may also be presented over a network such as the WorldWideWeb, and can be downloaded into the working memory of a data processor from such a network.

Please replace the paragraph beginning on Page 14, line 14, with the following amended paragraph:

Fig. 6 shows a schematic drawing of an exemplary embodiment of a multi-line CSCT scanner. This scanner is provided with a detector 48, comprising a plurality of lines of energy resolving detector elements, which may be the same as the ones described with reference to Fig. 1. The source of radiation ~~9~~ 59 is provided with collimator means, such that it generates a fan-beam of x-rays. The

arrangement of the detector 48 and the source of radiation 49 is such that the detector 48 is focus centered. The view depicted in Fig. 6 is parallel to the scanned plane or slice plane in order to further clarify the scanning process out of the x-y plane, i.e. the rotation plane of the source of radiation 49 and the detector 48. As may be taken from Fig. 6, a distance between the source of radiation 49 and the detector 48 is indicated as "SD"; a distance between the source 49 and the center of rotation 47 is indicated by S, a distance between the scatter center and the detector 48 is indicated by d, a distance between a detector element receiving radiation and the scanned plane or sliced plane is given by a and h indicates a height of the detector 48.

Please replace the paragraph beginning on Page 19, line 7, with the following amended paragraph:

Fig. 9 shows an exemplary embodiment of a data processing device for performing steps 1 to 4 described above. As may be taken from Fig. 9, a central processing unit (CPU) or image processor ~~1~~ 51 is connected to a memory ~~2~~ 52 for storing read-outs from the detectors or the finally reconstructed data. As indicated before, the data may be acquired by a CSCT scanner such as depicted in

Figs. 1 and 6. The image processor ~~1~~ 51 may furthermore be connected to a plurality of input/output-network or other diagnosis devices via a connection 53. The image processor ~~1~~ 51 is furthermore connected to a display ~~4~~ 54 (for example, to a computer monitor) for displaying information or images computed or adapted in the image processor ~~1~~51. An operator may interact with the ~~data~~ image processor ~~1~~ 51 via a keyboard ~~5~~ 55 and/or other input or output devices, which are not depicted in Fig. ~~1~~9.